

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
MICHAEL STROEDER et al.

Application No.: 10/540,497

Confirmation No.: 4218

Filed: May 31, 2006

Art Unit: 3743

For: TREATMENT OF GRANULAR SOLIDS IN
AN ANNULAR FLUIDIZED BED WITH
MICROWAVES

Examiner: S. M. Gravini

PRE-APPEAL BRIEF REQUEST FOR REVIEW

August 25, 2010

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with the Pre-Appeal Brief Conference Program, and with the claims having been twice rejected, Applicants hereby respectfully request a pre-appeal brief panel review of the Final Office Action mailed on May 25, 2010 in the above-identified patent application. The present Request is filed concurrent with the filing of a Notice of Appeal, payment of the appropriate fees, and before the filing of an Appeal Brief. No amendments are being filed with this request. Review is requested for the following reasons:

**I. NONE OF THE KIM, VAN SLOOTEN, CHEN OR HARDWICK REFERENCES
TEACH OR SUGGEST THE FEATURES OF CLAIM 1 AND THEREFORE THE
REJECTION UNDER 35 U.S.C. § 103(a) IS IMPROPER**

A. Background

Claims 1-15 and 24-25 are pending in the present application. Claims 16-23 have been withdrawn from consideration. Claims 1, 6, 10-13 and 24-25 were rejected under 35 U.S.C. §

103(a) as being unpatentable over Kim, U.S. Patent No. 5,374,413 (“Kim”) in view of van Slooten, U.S. Patent No. 4,992,245 (“van Slooten”) in view of Chen, U.S. Patent No. 5,234,526 (“Chen”). Claims 7-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of van Slooten in view of Chen in view of Hardwick, U.S. Patent No. 4,490,287 (“Hardwick”).

Independent claim 1 of the present application recites a method for the thermal treatment of granular solids in a fluidized-bed reactor including “introducing *from below* a first gas or gas mixture through at least one gas supply tube into a mixing chamber of the fluidized-bed reactor” and “supplying the microwave radiation to the mixing chamber through the at least one gas supply tube *wherein the at least one gas supply tube is a wave guide*” (emphasis added).

B. Kim, van Slooten, Chen and Hardwick each fail to disclose the features “introducing from below a first gas or gas mixture through at least one gas supply tube into a mixing chamber of the fluidized-bed reactor” and “supplying the microwave radiation to the mixing chamber through the at least one gas supply tube wherein the at least one gas supply tube is a wave guide” as recited in independent claim 1

Kim describes a fluidized bed reactor where microwaves are introduced through waveguides 24a and 24b and then through the reactor walls in front of the waveguides. See Kim, the Abstract, column 9, lines 52-57, column 10, lines 10-13, and Fig. 3.

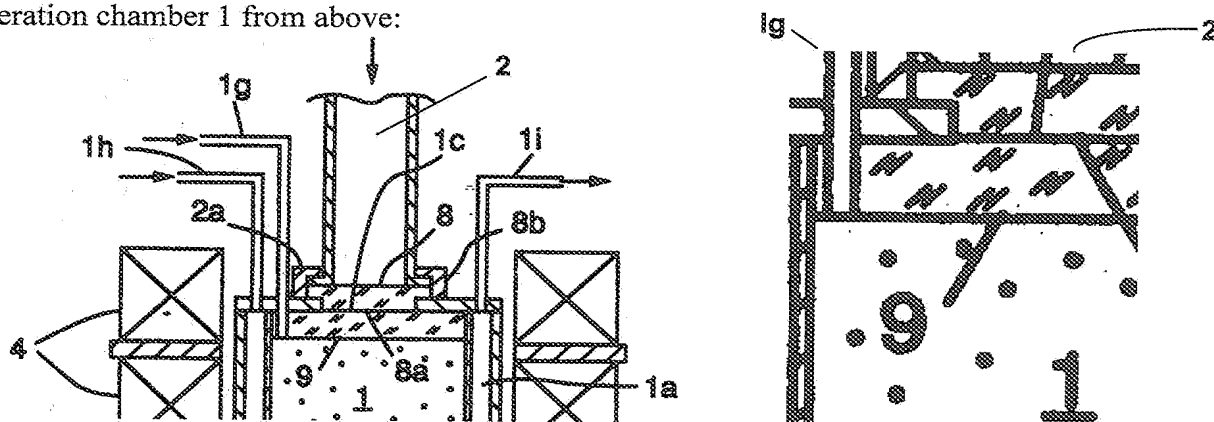
Van Slooten describes a fluidized bed reactor where silane-containing gas and hydrogen gas are, in isolation of each other, passed into vessel 12 through a perforated gas distributor plate 25. See van Slooten, column 8, lines 50-65 and Fig. 1.

Chen describes a microwave plasma processing device characterized by a low reflection factor of microwaves which is capable of generating homogenous plasma in a stable and effective manner. Referring to Figs. 3-5, Chen places sample S on sample stage 7 inside sample chamber 3, supplies gas into plasma generation chamber 1 from above via gas supply tube 1g and into sample chamber 3 through gas supply tube 3g, and introduces microwaves into plasma generation chamber 1 from above via waveguide 2, microwave lead-in opening 1c and

microwave-penetrable substances 8 and 9. See Chen, column 7, lines 22-26, column 9, lines 17-27 and Figs. 3-5.

Hardwick describes the treatment of substances contained in a solution or slurry including subjecting the solution or slurry to microwave radiation. Hardwick describes introducing a microwave source into an oven 4 by means of a wave guide 5 with distribution occurring with the aid of an oven mode stirrer 6. See Hardwick, the Abstract, column 1, lines 21-28, column 7, lines 30-33 and Fig. 1.

The Office acknowledges that Kim in view of van Slooten does not disclose the at least one gas supply tube being a wave guide. See Final Office Action of May 25, 2010, Detailed Action, page 3, lines 12-14. Nor does Chen cure this defect. Chen supplies gas into plasma generation chamber 1 *from above* via gas supply tube 1g and into sample chamber 3 from the left via gas supply tube 3g. Microwaves are supplied into the plasma generation chamber 1 from above via wave guide 2, microwave lead-in opening 1c and microwave penetrable substances 8 and 9. See Chen, column 9, lines 17-27 and Figs. 3-5. Fig. 3 of Chen clearly shows that gas supply tube 1g and microwave guide 2 run *parallel* to each other before *separately* terminating at plasma generation chamber 1. The Applicants refer to the annotated cutout of Fig. 3 below and to the annotated closeup of the cutout, both of which specifically show the area in which the microwaves, via microwave penetrable substance 9, and the gas, via gas supply tube 1g (supply tube 1g being the tube to the left of plasma penetrable substance 9), respectively enter plasma generation chamber 1 from above:



As Fig. 3 of Chen shows, in Chen, microwave radiation is not supplied from below to the mixing chamber through the at least one gas supply tube wherein the at least one gas supply tube is a

wave-guide, as is recited in claim 1 of the present application. Nor does Hardwick cure the defect of a combination of Kim, van Slooten and Chen.

Because each of Kim, van Slooten, Chen and Hardwick are missing at least the above-recited features of claim 1, any combination of Kim, van Slooten, Chen and Hardwick, to the extent proper, could not render claim 1, or any of its dependent claims 2-13 and 24-25, obvious.

II. APPLICATION NO. 10/540,433 IS NOT CO-PENDING AND CANNOT SERVE AS THE BASIS FOR A NONSTATUTORY OBVIOUSNESS-TYPE DOUBLE PATENTING REJECTION OF THE PRESENT APPLICATION

A. Background

Claims 1-15 and 24-25 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/540,433.

B. Application No. 10/540,433 is Not Pending

A Notice of Abandonment was issued for Application No. 10/540,433 on April 14, 2009 for failure to respond to a Restriction Requirement. A review of the Office's Public Pair site as of the date of this Request has confirmed that Application No. 10/540,433 is abandoned. Application No. 10/540,433 is therefore not co-pending. It is respectfully submitted that the nonstatutory obviousness-type double patenting rejection is therefore moot.

III. SUMMARY OF JULY 10, 2010 TELEPHONE INTERVIEW

A telephone interview was conducted between Examiner Stephen M. Gravini representing the Office and Leigh J. Buell and Norman B. Thot representing Applicants on July 10, 2010. Applicants thank Examiner Gravini for his time and for his consideration of Applicants' arguments.

During the interview, Applicants first reviewed with the Examiner the limitations of claim 1 and how those limitations were represented in the Figures of the present application. Applicants then reviewed the prior art with the Examiner and argued, for example, that none of the prior art teaches or suggests the limitation that the microwave radiation is supplied from below to the mixing chamber through the at least one gas supply tube wherein the at least one gas supply tube is a wave guide.

The Examiner suggested adding additional functional language further describing the wave guide and the gas supply tube or alternatively suggested filing an appeal.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejections should be withdrawn and the application passed to issue.

The Commissioner is hereby authorized to charge any unpaid fees deemed required in connection with this submission, including any additional filing or application processing fees required under 37 C.F.R. §1.16 or 1.17, or to credit any overpayment, to Deposit Account No. 12-1216.

Dated: August 25, 2010

Respectfully submitted,

By 

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